

**MONITORING, VERIFICATION AND EVALUATION
UNIT
AGRICULTURAL POLICY REFORM PROGRAM**

**MVE UNIT
APRP**

Sponsored by:

**Government of Egypt,
Ministry of Agriculture and Land Reclamation**

**United States Agency for International Development/Cairo
Office of Economic Growth, Agricultural Policy Division**

**PROGRESS
INDICATORS
FOR APRP**

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October, 1998

Monitoring
Report No.1

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LIST OF ACRONYMS

ALCOTEXA	Alexandria Cotton Exporters Association
APCP	Agricultural Production and Credit Project
APRP	Agricultural Policy Reform Program
ARC	Agricultural Research Center
CAAE	Central Administration for Agricultural Economics
CAPMAS	Central Administration for Public Mobilization and Statistics
CBE	Central Bank of Egypt
ELS	Extra-Long Staple
EPIQ	Environmental Policy and Institutional Strengthening IQC
FSR	Food Security Research (Unit)
GDAS	General Department for Agricultural Statistics
HC	Holding Company
IFPRI	international Food Policy Research Institute
LS	Long Staple
MALR	Ministry of Agriculture and Land Reclamation
MPWWR	Ministry of Public Works and Water Resources
MTS	Ministry of Trade and Supply
MVE	Monitoring, Verification, and Evaluation (Unit)
NPC	nominal Protection Coefficient
PAM	Policy Analysis Matrix
PBDAC	Principal Bank for Development and Agricultural Credit
RDI	Reform Design and Implementation (Unit)
RMG	Ready-Made Garment(s)
TCA	Transport Cooperative Authority
TCF	Textile Consolidation Fund
USAID	United States Agency for International Development
WPI	Wholesale Price Index
WUA	Water User Association

ACKNOWLEDGMENTS

The authors would like to express their gratitude to Dr. Saad Nassar, Director of the ARC and Program Director of APRP, for his support, morally and academically, and his guidance. Our thanks also to Eng. Mahmoud Nour, Program Coordinator of APRP.

We would also like to thank all the professional staff of the MVE, RDI, FSR, and EPIQ teams for their suggestions and comments.

USAID staff also provided valuable input and assistance. We would like to thank Tom Olson, Mohamed Omran, Glenn Rogers, Ali Kamel, Craig Anderson, Mahmoud Mabrouk, and Wadie Mankarious for their support and help.

The MVE support staff—Hesham Salah, Yvonne Louis, and Flora Naiem—also provided valuable assistance.

1. INTRODUCTION

The objective of this paper is to develop progress indicators for APRP. The purpose of these indicators is to give policy makers and the management of APRP regular feedback on the progress achieved in the five areas of emphasis of APRP: prices, markets, and trade; privatization and private investment; agricultural land and water resource investments, utilization and sustainability; agricultural sector support services; and food security and poverty alleviation.

The MVE Unit provides feedback on accomplishment of APRP's policy benchmarks through annual verification reports. These benchmarks accomplish significant policy reforms that lead to changes in the policy environment and various intermediate results. It is these changes and results that are measured by the progress indicators. The ultimate objectives of the policy reform program—higher income, greater efficiency—are more difficult to measure in the short run, but these are the subject of the MVE Unit's impact assessment (evaluation) program. The accompanying chart shows the relationship among these three types of analysis and reporting (see Figure 1).

Policy reforms directly affect the policy environment. Distortions in the policy environment can be measured by various ratios, many of which are contained in the Policy Analysis Matrix, or PAM. One of these is the Nominal Protection Coefficient (NPC), which measures the difference between domestic market prices and an opportunity cost like the world market price. Another measure of the policy environment is the level of the food subsidy. The NPC and the level of the food subsidy are two potential progress indicators.

When the policy environment is changed (through liberalization and privatization), various economic actors will respond. Thus there may be an increase in agricultural exports, private sector employment, or the share of the private sector in agricultural processing. These intermediate results can also be captured in simple indicators. Several such indicators are proposed below.

The objective of liberalization and privatization/private investment is more competition and greater participation of the private sector in economic activity. The final result of these is increases in both personal income and efficiency. The MVE Unit's impact assessment program will attempt to measure these effects through household surveys and analyses of the performance of key agricultural subsectors. The impact assessment program, however, is not a regular program of feedback. It is a more expensive and more difficult set of analyses, so it is not practical to measure the ultimate impacts of APRP on a regular basis.

For monitoring the progress of a program, good indicators should be easy and cheap to measure. They must be practical; namely, the data must be available.

The most difficult issue in the use of progress indicators is the extent to which one can say that the effect measured is the result of the program in question, namely APRP. This question can not be addressed here further than to say that it is not possible to quantify the strength of the relationship between these potential indicators and the myriad policy reforms under way in APRP. In the present case, the collective wisdom of the APRP technical staff will judge the appropriateness of the indicators proposed by the MVE Unit.

The MVE Unit undertook the task of developing progress indicators with the notion that they should represent as broadly as possible the goals of the program. To this end the indicators are arranged in this report according to the five areas of emphasis. In addition one could examine the indicators to determine how they correspond to the individual APRP goals. While finding indicators for each goal was not a specific objective of this exercise, the text that follows summarizes that correspondence.

A. Prices, Markets, and Trade

A.1 Farmers freely choose crop and livestock enterprises, management practices, and disposition of products.

Indicator(s): Agricultural Production per Unit of Water

A.2 Liberalized imports and exports

Indicator(s): Nominal Protection Coefficients: Urea and Rice; Real Value of Cotton Exports: Lint, Yarn, and RMG.

A.3 Liberalized domestic marketing for agricultural inputs and products

Indicator(s): Private Sector Share of Distribution of Nitrogenous Fertilizer

A.4 Improved essential supporting services and institutional policy environment to make markets work better.

Indicator(s):

A.5 Production incentives consistent with market conditions and comparative advantage.

Indicator(s): Nominal Protection Coefficients: Urea and Rice; Correlation between US Pima and Egyptian cotton prices.

B. Privatization and Private Investment

B.1 An expanded and more dynamic private sector in agribusiness.

Indicator(s): Private Sector Share of Employment: Cotton Ginning and Spinning; Private Sector Share of Volume: Seed Cotton Trade, Cotton Ginning, and Cotton Spinning; Private Sector Share of Volume of Wheat Milling.

B.2 Enhanced private sector efficiency, export performance, and voice in policy dialogue.

Indicator(s): Real Value of Exports: Cotton Lint, Yarn, and RMG.

C. Agricultural Land and Water Resources Utilization

C.1 Increased Productivity of public and private investments in land reclamation

Indicator(s):

C.2 Improved allocation of water

Indicator(s): Agricultural Production per Unit of Water

C.3 Enhanced long-term sustainability of Egypt's intensive irrigation-based agricultural production system.

Indicator(s):

C.4 Improved institutional capacity to formulate and manage resource policies.

Indicator(s):

D. Agricultural Sector Support Services

D.1 Research and extension services more responsive to producers' needs and based on advice rather than regulation and control.

Indicator(s):

D.2 Expand savings mobilization and credit and financial services at competitive costs in rural areas.

Indicator(s):

D.3 Assessment of infrastructure inadequacies and bottlenecks that reduce efficiency of agricultural production, marketing, and trade.

Indicator(s):

E. Food Security and Poverty Alleviation

E.1 Target food subsidies to the poorest households

Indicator(s):

E.2 Reduce food insecurity and income deprivation in poorest households.

Indicator(s): Agricultural Resource Income

E.3 Alleviate rural poverty

Indicator(s): Agricultural Resource Income

**Figure 1: MVE WORK PROGRAM:
CONCEPTUAL FRAMEWORK**

<div><div>POLICY & ECONOMIC ACTIVITY</div><div>MVE ANALYTICAL ACTIVITY</div><div>(Frequency)</div></div>	APRP POLICY BENCHMARKS	IMPACTS ON POLICY ENVIRONMENT	INTERMEDIATE RESULTS (Short-term)	FINAL IMPACTS (Long-term)
VERIFICATION (Per tranches)	Verification Report: Per benchmarks with some indicators of policy change (e.g., NPC).			
MONITORING (Regular if resources permit; coordinate with USAID)	Benchmark monitoring: Updates of accomplishment.	Policy monitoring report: Progress Indicators: Indicators of policy change (e.g., NPC), indicators of intermediate results (e.g., increase in imports/exports). Accompanying analysis essential.		
IMPACT ASSESSMENT (Per impact assessment plan)	→ C a u s a l C h a i n →			
			Impact Assessment Reports: Impact variables based on APRP goals (e.g., household income, structure/ conduct/ performance of agribusinesses, water use efficiency, agricultural growth rate); causal chain supported by verification & monitoring reports.	

2. PROPOSED PROGRESS INDICATORS

2.1 Prices, Markets, and Trade

2.1.1 Nominal Protection Coefficient, Urea; Nominal Protection Coefficient, Rice

Fertilizer and rice are two important markets in which APRP is striving to bring about additional liberalization of price and tariff policies.

The nominal protection coefficient (NPC) is defined as the ratio of the cost of a tradable measured at domestic market prices to its border (parity) price. Thus, the NPC is a measure of the transfer of resources between producers and the rest of the economy as a result of distorting policies like taxes, subsidies, and exchange rate manipulation.

Allocative efficiency exists when resources are allocated in such a way that it is impossible to make anyone in the economy better off without making someone else worse off. In order to achieve allocative efficiency the opportunity costs of resources used to produce each good must be equated at the margin to the good's scarcity value to consumers. Identifying a proxy set of efficient prices should reflect opportunity costs of inputs and scarcity values of outputs. In the case of an open economy, border prices of actual and potential imports and exports are an important reflection of the opportunity costs of production and scarcity values in consumption.

The NPC measures the divergence between domestic prices and international prices of output. If the NPC is less than one, this means that the private price of the output is higher than the border price and implies an implicit tax on production. In other words, those involved in the commodity system are earning less than they would if the commodity was freely traded. If the NPC is greater than one, the private price of the output is higher than the border price, implying a subsidy to producers. In other words, those involved in the commodity system are earning more than they would if the commodity was freely traded. If the NPC equals one, it indicates the absence of any intervention on the output market, or that the existing system of intervention produces both negative and positive impacts that result in a neutral impact on product prices.

Data on international rice prices are available at the General Department for Agricultural Statistics in the Central Administration for Agricultural Economics of MALR on a weekly basis via Internet.

Domestic prices for rice present certain problems. MTS collects wholesale prices, but only minimum and maximum prices are available, not means. From the trade statistics published by CAPMAS, one could calculate an export unit value (from the value and volume of rice exports), but this figure is a rather indirect estimate of price. Similarly a farmgate paddy price from MALR would need to be adjusted for milling and would still be a rather indirect estimate of the export price. The concept and timing used for collecting farmgate prices are not entirely clear. CAPMAS publishes retail prices, but these are not really appropriate for comparison to imports without significant adjustment. If wholesale price data

were available to make this adjustment, there would be no question of using retail price data. CAPMAS also publishes a wholesale rice price for all of Egypt, but it tends not to vary much, so its reliability is in some question. Finally, it may be possible to survey rice exporters or their incipient association, although one of the main principles of the monitoring program is that the collection of data should not require significant effort in the area of data collection. The analyst who eventually calculates this indicator will have to investigate further to determine the best domestic rice price series to use.

International fertilizer prices are available in the [International Fertilizer Market Bulletin](#). One also needs the international transport cost to get cif Alexandria prices; this data is available from traders. Local fertilizer prices are available from factories; local transport costs are from Abu Qir factory, but are determined by the Transport Cooperative Authority.

The frequency of calculation proposed for this indicator is annual.

Advantage(s):

- Shows remaining price distortions
- Measures the combined effects (including spillover effects) of multiple policy instruments

Disadvantage(s):

- Only shows distortions in the input/output market
- Does not identify the type of distortions, just the extent

2.1.2 Correlation Coefficient Between the Weekly Prices of US Pima and Egyptian Cotton

Cotton is a key commodity both in the agricultural economy of Egypt and in the Agricultural Policy Reform Program. For these reasons, it was originally proposed to calculate a nominal protection coefficient for cotton. This calculation depends on the small country assumption, namely that Egypt does not affect the price of cotton, but is a price taker. If this were true, the international price would be an independent measure of the opportunity cost. In the LS and ELS cotton markets, however, Egypt's cotton has a major share; the pricing behavior of Egypt affects the price of Pima and vice versa. Thus using any version of the Pima price to measure the opportunity cost of Egyptian cotton is not valid, as the Pima price is dependent on the price of Egyptian cotton, not independent of it.

A better indicator is the correlation coefficient between the weekly prices of US Pima and Egyptian cotton. This will reflect whether the Government is allowing the price to fluctuate freely like a market price or whether they are fixing the price and ignoring the price of Pima. In the first case, because the two cottons are close substitutes, the correlation will be high; in the second case, the correlation will be low.

Data on prices of US Pima and Egyptian cotton are published weekly in Cotton Outlook. Prices of Egyptian cottons are also available from ALCOTEXA.

The frequency of calculation for this indicator is proposed to be annual, at a time allowing the use of prices over the fall and winter (September-March) main marketing season for Egyptian cotton.

Advantage(s):

- Data easily available
- Easy to calculate
- Reflects desired price behavior directly

Disadvantage(s):

- Policy could still be arranged to set price of Egyptian cotton equal to previous week Pima price and correlation coefficient would be high without achieving free pricing

2.1.3 Real Value of Cotton Lint Exports; Real Value of Cotton Yarn Exports; Real Value of RMG Exports

Egypt strives to participate in international trade to raise the standard of living of its citizens. The goal of expanding exports has become increasingly important as the nations of the globe have witnessed gains from international trade through increasing efficiency and economic growth.

These indicators are calculated as the total value of cotton lint/yarn/RMG exports in real terms. The Wholesale Price Index (WPI) is used to convert the nominal value of the exports into real terms.

Data on cotton lint exports are available at ALCOTEXA. The data are available on a weekly basis; there is no lag in the availability of the data. TCF can provide data on yarn and RMG exports. The WPI is available from the Central Bank of Egypt (CBE). The lag in publication is one to two months.

The frequency of calculation of this indicator is proposed as annual.

Advantage(s):

- Data are easy to collect
- Measures performance of cotton trade policy directly

Disadvantage(s):

- Other macro policy instruments affect agricultural exports

2.1.4 Private Sector Share of Distribution of Nitrogenous Fertilizer

Liberalizing the distribution of domestically produced, mostly nitrogenous, fertilizer has been a major thrust of the APCP and APRP reform programs.

This indicator is defined as the ratio of private sector distribution of nitrogenous fertilizer to total distribution of nitrogenous fertilizer.

Data on the distribution of nitrogenous fertilizer on a monthly basis can be obtained from the Egyptian Association of Fertilizer Traders and Distributors and from the sales/marketing departments of the fertilizer producing companies (in particular Abu Qir and Talkha).

The frequency of calculation of this indicator is proposed to be annual.

Advantage(s):

- Easy to calculate
- Shows extent of private participation

Disadvantage(s):

- Does not indicate level of competition among private distributors

2.2 Privatization and Private Investment

2.2.1 Private Sector Share of Volume of Seed Cotton Trade; Private Sector Share of Volume of Cotton Ginning; Private Sector Share of Volume of Cotton Spinning

An important objective of APRP is the privatization of trade in seed cotton, lint cotton, and cotton processing, which includes ginning, spinning, weaving, and other functions.

These indicators are expressed as the ratio of the volume of private sector seed cotton trade/cotton ginning/cotton spinning to total seed cotton trade/cotton ginning/cotton spinning.

Data on the volume of seed cotton trade and ginning are available on an annual basis from the Holding Companies and their affiliated companies and from private firms. Data on the volume of cotton spinning are available on an annual basis from TCF and the public and private cotton companies.

The frequency of calculation of these indicators is proposed to be annual.

Advantage(s):

- Shows directly any success in moving from public to private operation of markets

Disadvantage(s):

- Data are not available at one source, so obtaining data is likely to be time-consuming

2.2.2 Private Sector Share of Volume of Wheat Milling

Wheat is a key subsector because of its importance to food security. Private investment in wheat milling, and especially the resulting wheat milled, is a good indicator of the ability of investors to enter this subsector, in which the Government traditionally played the dominant role.

This indicator is expressed as the ratio of private sector volume of wheat milled to total wheat milled. For the purpose of calculating this indicator, it may be convenient to assume that all wheat produced is milled in the same year. It would then be possible to subtract from the total production the amount of wheat milled by the public sector to get a good estimate of the amount of wheat milled by the private sector.

Data on the volume of wheat milling are available on annual basis from the HC, MTS, individual private mills, and US Wheat Associates.

The frequency of calculation of this indicator is proposed to be annual.

Advantage(s):

- Direct measure of private sector entry into subsector

Disadvantage(s):

- If estimated by aggregating the throughput of individual mills, the cost of data collection may be high

2.2.3 Private Sector Share of Employment, Cotton Ginning; Private Sector Share of Employment, Cotton Spinning

Employment is the most important issue in Egypt when addressing privatization, both politically and economically.

These indicators are defined as the ratio of employment in private sector cotton ginning/spinning to total employment in cotton ginning/spinning.

The data sources for calculation of employment are the concerned companies.

The frequency of calculation of this indicator is proposed to be annual.

Advantage(s):

- Direct measure of progress toward private sector dominance in key parts of the cotton subsector

Disadvantage(s):

- May be costly
- Political sensitivity

2.3 Agricultural Land and Water Resources Utilization

2.3.1 Irrigated Areas Under Private Water User Associations

As pressure builds on the available supply of water in Egypt, ways must be found to use water more efficiently and more effectively. One such way is the development of water user associations (WUAs). WUAs are highly encouraged for several reasons:

- Participation of farmers in water management
- Equity of water supply
- Enhanced availability of water at tail ends
- Improved maintenance

This indicator reflects improved allocation of water resources. It is measured as irrigated area under field (mesqa) level water associations (WUA), federations of WUAs, and district level water boards.

The data source for this indicator is the Improved Irrigation Sector, MPWWR.

The frequency of calculation of this indicator is proposed to be annual.

Advantage(s):

- Easy to calculate

Disadvantage(s):

- Does not measure the institutional capability of the associations
- Does not measure the efficiency of water use

2.3.2 Agricultural Production Per Unit of Water

With pressure building on the available supply of water in Egypt, using water more efficiently is becoming critical. This indicator attempts to measure such efficiency.

The indicator is defined as aggregate agricultural production divided by the use of water in the agricultural sector. A three-year baseline average of price weights is used to calculate the aggregate value of production; these weights do not change from year to year, as they are used only for aggregation. The amount of water is estimated as the net release of water to the agricultural sector.

Data for this indicator are available from MALR and MPWWR.

The frequency of calculation of this indicator is proposed to be annual.

Advantage(s):

- Relates total output to a critical input
- Easy to calculate

Disadvantage(s):

- Crude measure of input use efficiency as it attributes all gain to one input

2.3.3 Volume of Paddy Rice Production Per Unit of Water

This indicator is similar to the previous one (aggregate production per unit of water), but is calculated for an individual crop. Rice is chosen because it is one for which high water consumption has been identified as a problem. The amount of water will be estimated as the consumptive use. This is the product of time and the pan evaporation per unit of time. Since the number of days the rice crop is in the field is expected to change with the introduction of shorter-season varieties, the amount of water will change

Data sources and frequency are the same as for the previous indicator.

Advantage(s):

- Relates total output to a critical input
- Relatively easy to calculate

Disadvantage(s):

- Crude measure of input use efficiency as it attributes all gain to one input

2.4 Agricultural Sector Support Services

2.4.1 Ratio of Earnings of Non-Banking Activities to Total Earnings, PBDAC

This indicator is defined as the ratio of earnings from non-banking activities to total earnings from all activities. When the ratio increases over time, it implies the non-banking activities are increasing and therefore the PBDAC is more involved in non-banking activities. In other words, the PBDAC is still involved in the commercial activities such as its involvement in inputs (seed and fertilizer) distribution. When this ratio is decreasing over time, it means that the PBDAC is moving toward functioning as a banking institution and eliminating its intervention in commercial activities.

Data on earning from non-banking activities and banking activities are available on an annual basis from income statements published by PBDAC.

The frequency of calculation of this indicator is proposed to be annual.

Advantage(s):

- Easy to calculate

Disadvantage(s):

- Data may be difficult to interpret

2.5 Food Security and Poverty Alleviation

2.5.1 Agricultural Resource Income

Agricultural resource income is defined as the difference between the gross value of agricultural crop production and the costs of current inputs purchased from outside the agricultural sector. Its purpose is to assess the aggregate income attributable to the land, labor, water, and capital resources used in the production of crops.¹

This indicator will give some information about the changes in welfare among farm operators.

Data on input and outputs and their prices are available from MALR.

The frequency of calculation of this indicator is proposed to be annual.

Advantage(s):

- In the absence of farm income data, agricultural resource income gives some indication of changes in farmer welfare.

Disadvantage(s):

- Technical coefficients are not derived from scientific surveys, so the trends they reflect may not be accurate.
- Livestock production is an important part of rural welfare, but it is absent from this calculation.
- Many rural households derive income from off-farm activities, but this income is also missing from this calculation.

¹See p. 154ff., in Rady, Abdel-Moneim, Mohamed A. Omran, and Fenton B. Sands, "Impacts of the Policy Reforms on Agricultural Income, Employment, and Rural Poverty," Chapter 7 of Fletcher, Lehman, ed. 1996. *Egypt's Agriculture in a Reform Era*. Ames, Iowa, USA: Iowa State University Press.

Table 1: Proposed APRP Progress Indicators and Their Data Requirements

Indicator	Data Requirements	Data Sources	Frequency of Data Availability	Lag in Release/ Month Available
1. Nominal Protection Coefficient a) Urea	International prices Int'l transport cost Ex-factory prices Local transport cost	International Fertilizer Market Bulletin Traders Fertilizer producers Abu Qir company (& TCA)	Weekly As needed Monthly As needed	1 week N/A 1 month N/A
b) Rice	International prices Int'l transport cost Wholesale prices or export unit value? Local transport cost	MALR/Internet Traders CAPMAS Traders	Weekly As needed Annual? As needed	1 week N/A ? N/A
2. Correlation coefficient between weekly prices of US Pima & Egyptian Cotton	Weekly US Pima prices Weekly Egyptian cotton prices	Cotton Outlook ALCOTEXA	Weekly	1 week
3. Real value: a) Cotton lint exports	WPI Value of cotton lint exports	CBE ALCOTEXA	Quarterly (monthly data) Weekly	1-2 months 1 week
b) Cotton yarn exports	Value of cotton yarn exports	TCF	Quarterly	1 month
c) Cotton ready-made garment (RMG) exports	Value of RMG exports	TCF	Quarterly	1 month

Table 1: Proposed APRP Progress Indicators and Their Data Requirements, continued

Indicator	Data Requirements	Data Sources	Frequency of Data Availability	Lag in Release/ Month Available
4. Private sector share of distribution of nitrogenous fertilizer	Private sector distribution of nitrogenous fertilizer Total distribution of nitrogenous fertilizer	Fertilizer companies, Egyptian Association of Fertilizer Traders and Distributors	Monthly	1 month
5. Private sector share of: a) Seed cotton trade (volume)	Seed cotton traded privately Total seed cotton traded	Cotton HCs, ALCOTEXA, large private traders	End of season (March?)	Trading ends about December; data available from gins in April
b) Cotton ginning (volume)	Cotton ginned by private sector Total cotton ginned	Cotton HCs, MALR	Monthly or more	Ginning ends about March; data available in April
c) Cotton spinning (volume)	Cotton yarn produced by private sector Total cotton yarn produced	TCF (export data), cotton Hcs, private spinners	Monthly or more (for public companies) ?	1 month
6. Private sector share of volume of wheat milling	Wheat milled by private sector Total wheat milled	Private sector mills, HC, MTS	Annual	?
7. Private sector share of employment: a) Cotton ginning	Employment, private cotton ginning Total employment in cotton ginning	Private sector ginners, Cotton HCs	Annual	?
b) Cotton spinning	Employment, private cotton spinning Total employment in cotton spinning	Private sector spinners, Cotton HCs	Annual	?
8. Irrigated areas under private water user associations (WUAs)	Irrigated area under field (mesqa) level WUAs, federations of WUAs, and district level water boards	Irrigation Improvement Project Sector/MPWWR	Annual	?

Table 1: Proposed APRP Progress Indicators and Their Data Requirements, continued

Indicator	Data Requirements	Data Sources	Frequency of Data Availability	Lag in Release/ Month Available
9. Agricultural production per unit of water	Agricultural production Three-year average of farmgate prices Crop areas Consumptive use of water per feddan	MALR MALR MALR MPWWR	Annual Annual Annual Periodic revisions	December December Various, all by December N/A
10. Volume of paddy rice production per unit of water	Production Area Consumptive use of water per feddan	MALR MALR MPWWR	Annual Annual Periodic revisions	December December N/A
11. Ratio of earnings of non-banking activities to total earnings, PBDAC	Earnings from non-banking activities Total earnings	PBDAC	Annual	?
12. Agricultural resource income	Crop production Producer prices Input prices Technical coefficients for inputs per feddan Crop areas	MALR	Annual	December?

ANNEX: OTHER INDICATORS CONSIDERED

A. Prices, Markets, and Trade

Changes in Farmgate Prices

Data on farmgate prices are available on a monthly basis at the district level in the MALR, Central Administration of Agricultural Economics and Statistics. These prices reflect the market conditions, but their meaning as an indicator is not clear. An increase in the output price would be beneficial for producers, but not for consumers.

Share of Values of Agricultural Exports to Total Value of Exports

While data are available, the ratio is misleading due to changes in both agricultural exports and total exports.

Regular and Timely Marketing Information

- The definition of the indicator is difficult because both quantity and quality of data should be integrated in the definition
- Satisfaction of beneficiaries is difficult to measure
- Identification of target groups
- Availability of data to all beneficiaries
- Type of marketing information is different according to type and size of farmers

Effective Rate of Protection

- Relies on cost of production data that are not yet scientifically sampled

Domestic Resource Cost, DRC

- Not highly linked to APRP
- Data-intensive

Agricultural GDP

- Good data not available

Private Sector Share of Volume of Rice Milling

- At the beginning of APRP, this was already close to 100%.

Private Sector Share of Employment in Rice Milling

- The data would not be easily available because there are large numbers of mills and no existing data for the private firms. There is also no reliable sample frame as yet.

Stability of Wheat and Bread Prices

- No data are available on a regular basis

Price Integration Over Space

- No data are available on a regular basis

B. Privatization and Private Investment

Ratio of Inventory to Sales

Although the decrease of the size of inventory especially for cotton spinning and weaving is desirable, the sale prices should be reasonable.

Productivity of Private Enterprises

- No data available

Average Cost of Private Enterprise

- No data available

Net Income

- No data available

Value of Assets Privatized

- Data likely to be misleading because of the inclusion of land in privatizations

Value of New Private Investments

- No data available

Private Sector Share of Employment, Commercial Wheat Milling

- Deleted by USAID

Total Long-Term Debt of All Cotton Subsector Affiliated Companies

- Deleted by USAID

C. Agricultural Land and Water Resources Utilization

Volume of Sugarcane Production Per Unit of Water

- No proper data available on the amount of water that is likely to be saved with the adoption of new technologies. Neither consumptive use nor applied water gives the right answer because a significant amount of water may be reused.

Function Index of WUAs

- No data available on the functions of WUAs
- Subjective judgement on the WUAs functions
- Costly surveys on the WUAs functions

Water Quality

- No data available on a regular basis

Waterlogging

- No data available on a regular basis

Number of Private Water User Associations

- Does not reflect the functions or the purposes of WUAs

EC Meter; Electric Conductivity Meter; Soil Salinity

- No data available on a regular basis

SAR; Sodium Adsorption Ratio; Soil Alkalinity

- No data available on a regular basis

Heavy Metals; Fe, Mn, Zn, Ca, Cd, Pb

- No data available on a regular basis

Fertilizer Residuals; Nitrates

- No data available on a regular basis

Cost of Production of Major Crops: Cotton, Wheat, Maize, Rice

- No time series of reliable data are available

D. Agricultural Sector Support Services

Equity of PBDAC

- Does not distinguish banking and non-banking activities

Capital Adequacy of PBDAC

- Does not distinguish banking and non-banking activities

Liquidity Ratio

- Does not distinguish banking and non-banking activities
- No data are available on a regular basis

No. of Accidents of Pesticides

- No data

Low Use of Dangerous of Pesticides

- No data

More Use of Safe Pesticides

- No data

Low Damage to Crops

- No data

E. Food Security and Poverty Alleviation

Proportion of Subsidies Going to the Poor

- No data are available on regular basis

Leakage Before Food Subsidy Reaches Consumers

- No data are available on regular basis

Proportion of Population Under Poverty Line

- No data are available on regular basis
- Not highly linked to APRP

Gini Coefficient For Income Distribution at Regional Levels

- No data available on regular basis
- Not highly linked to APRP

Real Wages in Agricultural Sector

- Is considered as impact indicator

Rate of Employment in Rural Areas

- Not highly linked to APRP, as it includes non-agricultural employment

Ratio of Value of Food Subsidy to Government Budget

- Deleted by USAID